

## Teaching and learning research methods and methodology

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# Teaching and learning research methods and methodology

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# Teaching & Learning Research Methods & Methodology

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BOND UNIVERSITY

OFFICE OF QUALITY, TEACHING,  
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# Workshop Map

4 methodologies

Experimental

Quasi-experimental

Ethnographic

Hermeneutic Phenomenological



# Workshop Map

For each methodology

What is it?

An example

Terms to know

Advantages & Disadvantages

What data to collect

How to collect it (methods)

How to analyse it

How to interpret it



# Why the focus on Research Methods & Methodology?

Skeletal Framework

Passing CoC

Publishable



Methods - set of cohesive strategies and approaches

Methodology - methods in the context of ontology & epistemology



Method - interpretive  
interviewing

Methodology -  
grounded theory



Choose a camp

Or

Eclectic



How do you know what  
methods and  
methodology to use?



Let your question  
be your guide.

Read beyond content  
to process.



# How many subjects?

*Quantitative  
Formulas*

*Qualitative  
Saturation of Themes*



# The Matching Game

4 methodologies

Experimental

Quasi-experimental

Ethnographic

Hermeneutic Phenomenological



## The Matching Game

A researcher wants to know what it is like to be an international uni student in Australia.

A researcher would like to investigate if a small student-teacher ratio is beneficial to the uni student.

A researcher is contracted to study club culture as part of the university student experience.

A researcher is interested to know if a new stats curriculum for first year uni students is better than the existing stats curriculum.



# Experimental - What is it?

Random Assignment  
Experimental Group  
Control Group  
True Experimental Design  
OXO  
O\_O



## Example

A researcher is interested to know if a new statistics curriculum for first year Uni students is better than the existing statistics curriculum.



## Terms to Know

Independent variable  
Dependent variable  
Control variable  
Operationalisation



## Advantages

- 1) Can we establish cause and effect
- 2) Gold standard of research

## Disadvantages

- 1) Expensive
- 2) Not always practical



What data to collect  
Depends on how you operationalise your  
variables  
Example  
How would you operationalise 'better'?



How to collect it

Again depends on how your variables are operationalised

Eg. Performance operationalised as final exam scores  
Collect final exam scores of experimental group and control group and check if there is a statistically significant difference in scores between the groups



How to analyse it

Enter data into a SPSS File  
Example



How to interpret it

In social sciences we allow a 5% probability of obtaining the results we did purely due to chance.

Hence, we consider our results statistically significant if the probability of obtaining it is less than 5%



## Quasi-Experimental What is it?

Not always possible to randomly allocate participants to experimental and control groups



## Example

A researcher would like to investigate if a small student-teacher ratio is beneficial to the uni student.



Terms to Know

Matching comparison groups



Advantages

Practical and can still establish causality

Disadvantages

Not Gold Standard



What data to collect

Operationalise student-teacher ratio  
(eg. 20)

Operationalise 'beneficial' suggestions?



How to collect it



How to analyse and interpret it  
Exactly the same as the  
experimental method example



## Further Reading

- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalised causal inference*. Boston: Houghton Mifflin.
- Creswell, J. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Prentice Hall.
- Leedy, P. D. & Ormrod, J. e. (2005). *Practical research: Planning and design (8th Ed,)*. Pearson Educational



## Ethnography - What is it?

Ethnography studies the culturally shared, common sense perceptions of everyday experiences. Ethnography is the task of describing a particular culture, for example the form of life of an urban junior high school class ... Ethnographers use an informant or participant-observation approach ... They ask, "what do people do here? What kind of people are here?"  
(van Manen, 1990, p.177-8)



# Example

<http://jce.sagepub.com/content/39/1.toc>



# Terms to Know

Lived experience

Bounded culture

Participant Observer



# Advantages & Disadvantages

Deep understanding  
Situating experience

Cannot infer to population  
Not correlational



# What data to collect

Field Notes

Observations

Reflections

Artifacts

Emerson, Fretz & Shaw (1995)



# How to Collect It

Reading field notes as a data set

Asking questions of field notes

Open coding

Writing initial memos

Selecting themes

Focused coding

Integrative memos

Do not ignore emotions.



How to analyse it

Application software? NVIVO

Or manual analysis

Inter-rater reliability?



How to interpret it

Participants as interpreters?  
Creating theory from field notes



## Hermeneutic Phenomenology - What is it?

It is a descriptive (phenomenological) methodology because it wants to be attentive to how things appear, it wants to let things speak for themselves; it is an interpretive (hermeneutic) methodology because it claims that there are no such things as uninterpreted phenomena.

(van Manen, 1990, p. 180)



## Example

Kinash, S., & Hoffman, M. (2009). Children's wonder-initiated phenomenological research: A rural primary school case study, *Studies in learning, evaluation, innovation and development (SLEID)*, 6(3), pp. 1–14.

[http://works.bepress.com/shelley\\_kinash/44/](http://works.bepress.com/shelley_kinash/44/)



# Terms to Know

Lived experience

Ontology

Epistemology

Social Construction

Discourse



# Advantages & Disadvantages

Deep understanding  
Situating experience

Cannot infer to population  
Not correlational



What data to collect

In addition to what you collect  
in Ethnography

Interactive Interviews  
'what is it like to be'



How to collect it

Field notes

Recording (multimedia?)

Artifacts



How to analyse it

Application software? NVIVO

Or manual analysis

Inter-rater reliability?

Transcripts

Discourse Analysis



How to interpret it

Participants as interpreters?

Creating theory

Obligation to Interpret  
(beyond post-modernism)



# Measures of Quality

*Quantitative*  
*Reliability*  
*Validity*

*Qualitative*  
*Credibility*  
*Transferability*  
*Dependability*  
*Confirmability*  
*(Lincoln & Guba)*



## Stocking your library

Alvesson, M. & Skoldberg, K. (2000).  
*Reflexive methodology*. London: Sage.

Cole, A. L. & Knowles, J. G. (2000).  
*Researching teaching: Exploring teacher  
development through reflexive inquiry*.  
Needham Heights, MA: Allyn & Bacon.

Emerson, R. M., Fretz, R. L. & Shaw, L. L.  
(1995). *Writing ethnographic field notes*.  
Chicago: University of Chicago Press.



## Stocking your Library (cont'd)

Marshall, C. & Rossman, G. B. (1989). *Designing qualitative research*. California: Sage Publications.

Van Manen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: State University of New York Press.

Kincheloe, J. L. & Berry, K. S. (2004). *Rigour and complexity in educational research: Conceptualizing the bricolage*. New York: Open University Press.

Madden, R. (2010). *Being ethnographic: A guide to the theory and practice of ethnography*. California: Sage Publications.